

FIG. 1A

FIG. 1B

FIG. 1C

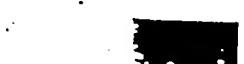
Baits	Prey	Reporter	Reporter Output	Logical Relationship								
			<table border="1"> <tr> <td>X-Gal</td><td>X-Gal</td></tr> <tr> <td>Glu</td><td>Gal</td></tr> <tr> <td>URA-</td><td>URA-</td></tr> <tr> <td>Glu</td><td>Gal</td></tr> </table>	X-Gal	X-Gal	Glu	Gal	URA-	URA-	Glu	Gal	
X-Gal	X-Gal											
Glu	Gal											
URA-	URA-											
Glu	Gal											
LexA-hSos1	B42-Ras B42	LexOp-LacZ										
TetR-c-Raf1	B42-Ras B42	TetOp-URA3		And								
LexA-Max	B42-c-Raf1 B42-Mxi1	LexOp-LacZ		Ls1								
TetR-RasV12	B42-c-Raf1 B42Mxi1	TetOp-URA3		Ls2								
LexA-RasV12	B42-c-Raf1 B42-Cdc25	LexOp-LacZ		Ls1								
TetR-RasA15	B42-c-Raf1 B42-Cdc25	TetOp-URA3		Ls2								

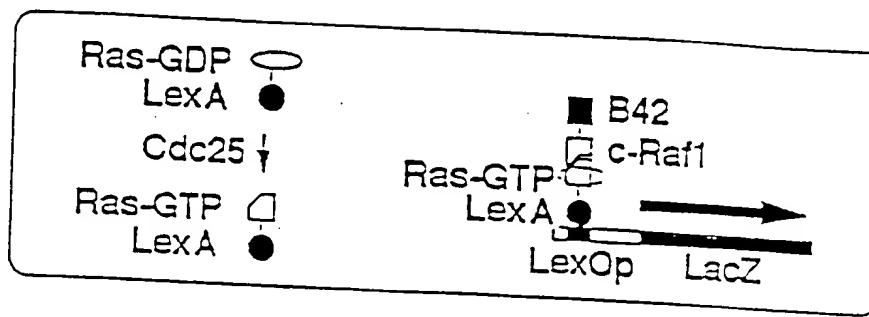
Figure 2

FIG. 3A

Cell	LacZ Output	β -Galactosidase Activity
1		22.6 ± 3.3
2		7.4 ± 1.0

FIG. 3B

Cell 1



Cell 2

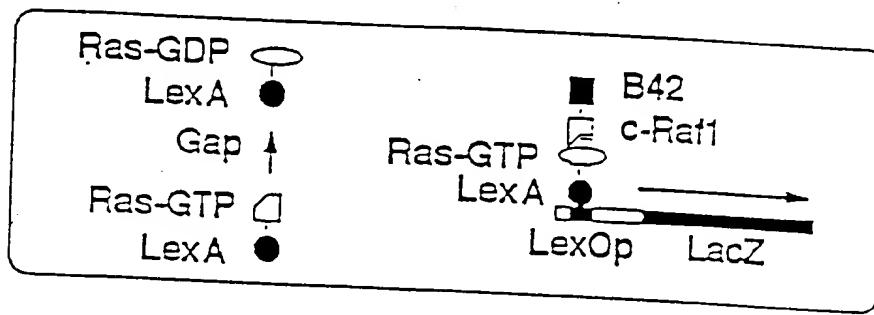


FIG. 3C

Input Values		LacZ Output
1 (B42-c-Raf1)	0 (GAP)	0
1 (B42-c-Raf1)	1 (Cdc25)	1

Logical Not

- α factor = 0
- $\text{TGF-}\beta$ = 1
- Input α -factor, output $\text{TGF-}\beta$
- Input $\text{TGF-}\beta$, output α factor

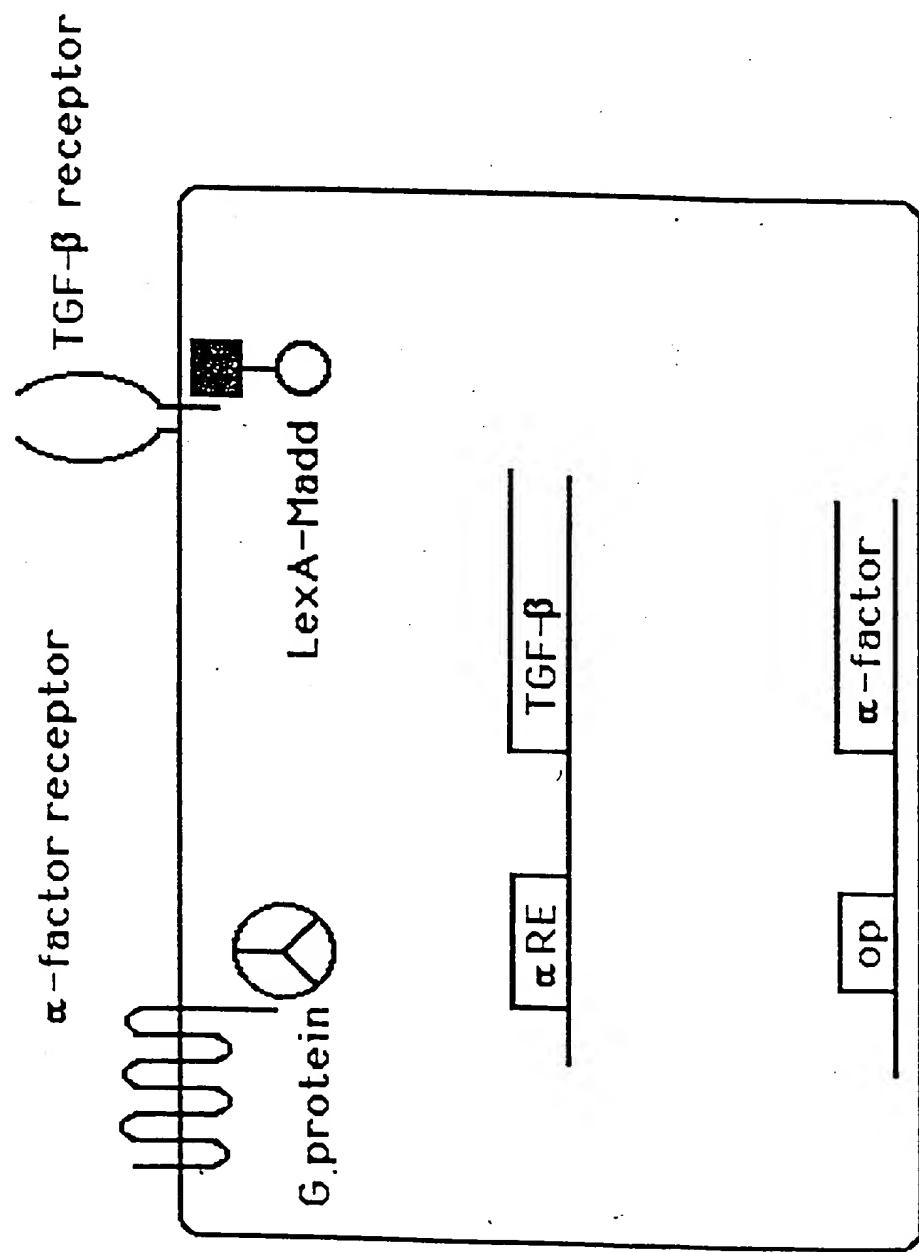


FIG. 4

Four input output channels
(variety of possible
logical operations)

Inputs	Receptors
α factor	α factor R
TGF- β	TGF- β R
Delta	Notch
Bradykinin	Bradykinin R

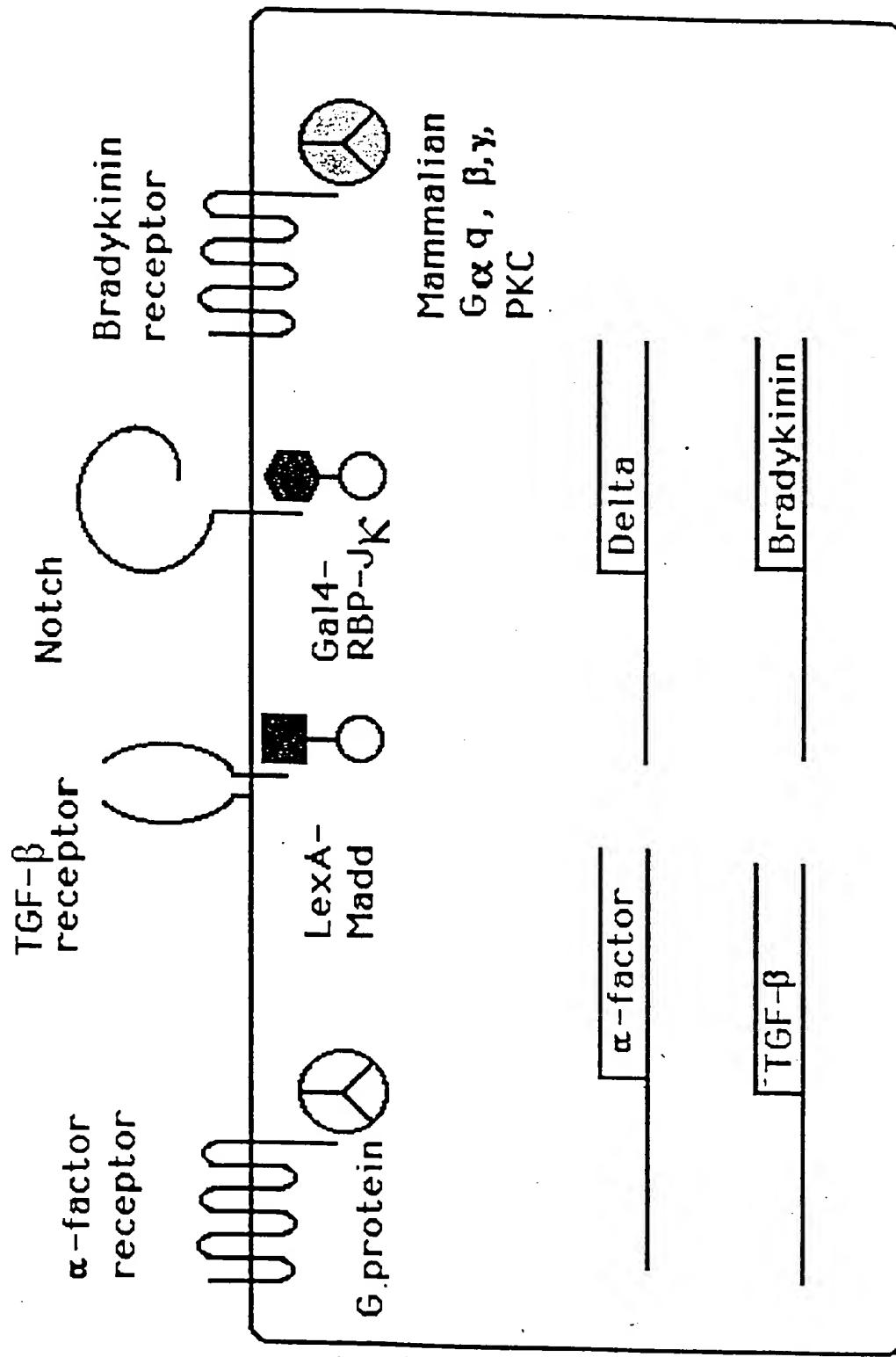


FIG. 5

Fluorescence resonance energy transfer "transistor"

No green light input Green light input
HIV protease linker intact Linker cleaved
Blue light input Blue light input
Green light output No green fluorescence

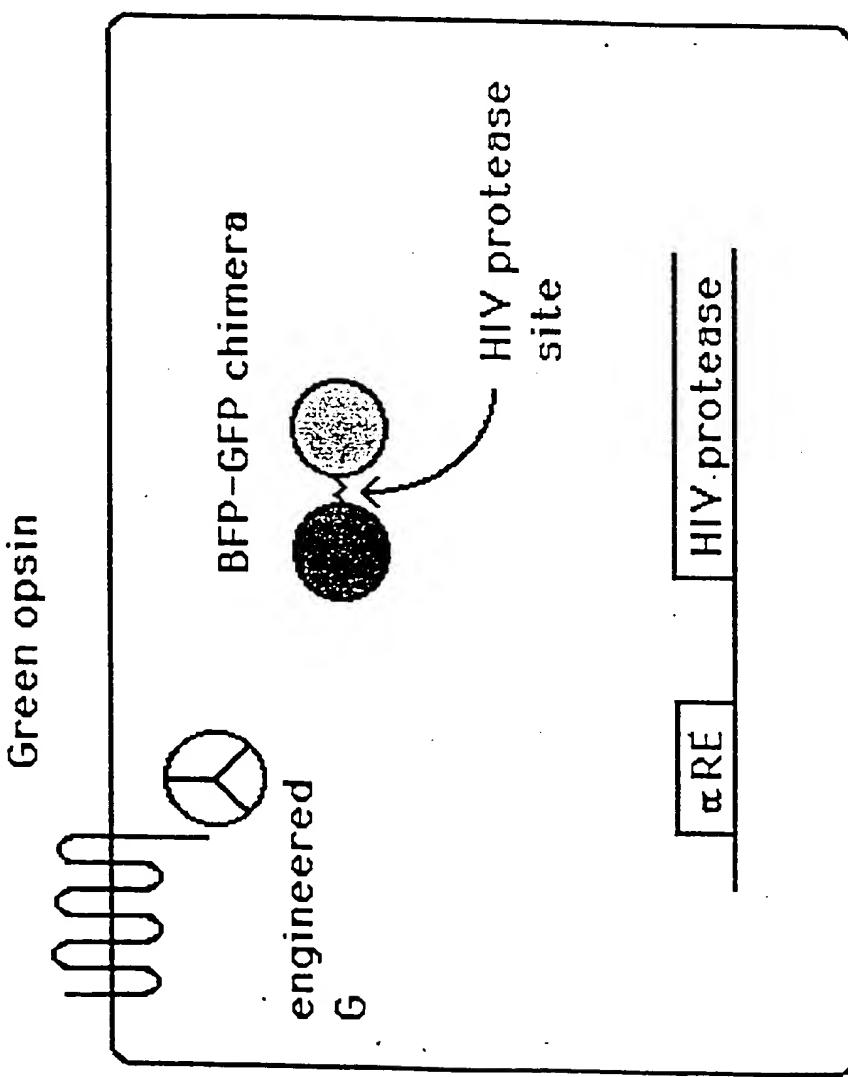


FIG. 6